In the Claims:

Claims 10, 16, and 24, amend to read as follows:

10. (Twice Amended) An apparatus including means for determining trapping of pathogen by antibodies deposited in a fluidic channel, comprising:

a fluidic channel having at least one pair of spaced electrodes localized along a length of said fluidic channel, with the electrodes of said at least one pair being located on the same side of said fluidic channel,

antibodies located on said spaced electrodes,

means for producing an electric field across said spaced electrodes, and

an impedance sensor for measuring impedance between said spaced electrodes.

16. (Twice Amended) A sensor using impedance measurements to detect the presence of pathogens attached to antibodies, comprising:

a microfluidc device having at least one microchannel therein,

at least one pair of spaced electrodes located on a surface along a length of said microchannel,

said pair of spaced electrodes being located on the same surface of the microchannel,

antibodies located on said spaced electrodes,

an AC or DC power supply for producing an electric field across said spaced electrodes, and

means for measuring impedance between said spaced electrodes.

24. (Amended) In an apparatus having means for determining trapping of pathogen by antibodies deposited in a fluidic channel, the improvement comprising:

at least one pair of spaced electrodes located on a same surface and along a length of said fluidic channel,

antibodies located on said spaced electrodes,

means for producing an electric field across said spaced electrodes, and an impedance sensor for measuring impedance between said spaced electrodes.